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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,025	09/12/2000	Fabio M. Chiussi	21--9-8-5	5851

22046 7590 08/24/2004

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EXAMINER

JAIN, RAJ K

ART UNIT	PAPER NUMBER
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2664

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/660,025

Applicant(s)

CHIUSSI ET AL.

Examiner

Raj Jain

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/28/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/9/2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Claim Objections

Claims 10, 11, 13, 15 and 16 are objected to because of the following informalities: The use of “first type of backpressure” and “second type of backpressure” is not clear as to what constitutes the specific types given that applicant has defined as using “selective” backpressure and is understood to properly mean as “one” type of backpressure being implemented. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan et al (US Pat. 6,408,005 B1).

Regarding claim 1, Fan discloses a new scheduling scheme, which uses statistical approaches to admission control so as to provide much higher utilizations, while maintaining the guaranteed QoS. The general concept is the rate from two components: (1) a minimum guaranteed rate, and (2) a portion of the unused bandwidth (see abstract, cols 1-2).

Fan discloses - aggregating one or more component traffic flows into a component traffic stream (see Fig 1, SQ1, SQ2, incoming streams are aggregated into M1, M 2 etc traffic streams);

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- aggregating one or more component traffic streams into an aggregate stream (see **Figs 1, 2 item CQ, col 1 L29-65, M1, M2** traffic streams are aggregated into one CQ stream);
- carrying the aggregate stream in a single, FIFO queue (see **col1 L29-35**, the use of FIFO is disclosed as one form of scheduler that may be implemented); and
- generating selective backpressure on selected ones of the component traffic streams such that selected ones of the component streams are desirably regulated (Fan discloses the use of a “global” backpressure scheme see **col 4 L16-50**).

Fan does not disclose the use of “selective” backpressure, however, one skilled in the art can appreciate the interchangeable concepts of “global” and “selective” backpressure schemes that either allows a node to control an entire multiple-connection link or to control a single best effort connection as in the latter case (see US Pat. 5,629,928 issued to Calvignac et al., see **cols 1-2**). Thus, it would have been obvious to one of ordinary skill in the art to implement “global” backpressure or “selective” backpressure to provide a desired traffic flow scheme and further control congestion within a given node prior to data loss as a consequence of congestion.

Regarding claim 2, Fan discloses QoS for the traffic flows and control thereof, see abstract, col 5 L54-62).

Regarding claim 3, Fan discloses aggregating of traffic streams based on per flow of VC's and inherently destination, see cols 17-18.

Regarding claim 4, Fan discloses aggregation of traffic with or without delay (see Fig 3 and col 12 L37-50).

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Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan et al (US Pat. 6,408,005 B1) in view of Chen et al (US Pat 6,188,674 B1). Fan discloses a traffic shaping system which increases the connection-carrying capacity of a network node by using a scheduler for scheduling of cells to increase the admissible number of connections (**see abstract and Figs 1, 2**). The traffic flows are aggregated into a component traffic stream and aggregate stream, (**see cols 1-5, Figs 1-3 and claims 1-4**).

Fan fails to disclose the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as desired.

Chen discloses the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as appropriate, (**see abstract and col 2 line 47- col 3 line 25**).

Chen describes a method for packet loss measurement in high-speed switches by identifying traffic flows in the ingress side of switches, and measuring packets losses for the identified flows on the egress side of the switches. On the egress side, the packet flow is monitored and the packets are counted using the block size as a counting modulo. The value of this counter at the receipt of a marked packets is used to update the number of packets that do not make their way across the switch, see fig 1 and abstract. The traffic flow in Chen can be defined

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in different ways, and at various degrees of granularity, depending on the user desires, or requirements, (**see col 2 L47-col 4 L40**). The packet flow scheme of Chen provides an ongoing update of how many packets have been lost within a switch or node and further to prevent overflow of same switch/node and thus reducing further packet loss and increasing link efficiency.

Therefore it would have been obvious to one of ordinary skill in the art to include the packet counter scheme of Chen within Fan so as to reduce packet loss and increase link efficiency.

Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan et al (US Pat. 6,408,005 B1) in view of Chen et al (US Pat 6,188,674 B1) and further in view of Brown et al (US Pat 6,075,772).

Regarding claim 9, Fan discloses a traffic shaping system which increases the connection-carrying capacity of a network node by using a scheduler for scheduling of cells to increase the admissible number of connections (**see abstract and Figs 1, 2**). The traffic flows are aggregated into a component traffic stream and aggregate stream, (**see cols 1-5, Figs 1-3 and claims 1-4**).

Fan fails to disclose the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as desired.

Chen discloses the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as appropriate, (**see abstract and col 2 line 47- col 3 line 25**).

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Chen describes a method for packet loss measurement in high-speed switches by identifying traffic flows in the ingress side of switches, and measuring packets losses for the identified flows on the egress side of the switches. On the egress side, the packet flow is monitored and the packets are counted using the block size as a counting modulo. The value of this counter at the receipt of a marked packets is used to update the number of packets that do not make their way across the switch, see fig 1 and abstract. The traffic flow in Chen can be defined in different ways, and at various degrees of granularity, depending on the user desires, or requirements, (see col 2 L47-col 4 L40). The packet flow scheme of Chen provides an ongoing update of how many packets have been lost within a switch or node and further to prevent overflow of same switch/node and thus reducing further packet loss and increasing link efficiency.

Fan and Chen fail to disclose guaranteed bandwidth traffic and/or best effort traffic.

Brown discloses data control through a communications system via communications adapter having at least one guaranteed bandwidth connection and a best effort connection, (see **Fig 2, abstract, claims 1, 10 and 20**). The use of both the best effort buffer and a guaranteed bandwidth buffer increases control to provide for fair sharing of resources.

Therefore it would have been obvious to one of ordinary skill to modify Fan's traffic scheduler to adapt to having both a best effort queue and a guaranteed bandwidth queue so as to better control network resources through fair sharing of allocated bandwidth for each data stream.

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Regarding claim 10, Chen discloses the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as appropriate, (**see abstract and col 2 line 47- col 3 line 25**).

Regarding claims 11 and 13-16, Fan discloses a traffic shaping system which increases the connection-carrying capacity of a network node by using a scheduler for scheduling of cells to increase the admissible number of connections (**see abstract and Figs 1, 2**). The traffic flows are aggregated into a component traffic stream and aggregate stream, (**see cols 1-5, Figs 1-3 and claims 1-4**).

Fan fails to disclose the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as desired.

Chen discloses the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as appropriate, (**see abstract and col 2 line 47- col 3 line 25**).

Fan and Chen fail to disclose guaranteed bandwidth traffic and/or best effort traffic. Brown discloses data control through a communications system via communications adapter having at least one guaranteed bandwidth connection and a best effort connection, (**see Fig 2, abstract**).

Fan discloses the use of a “global” backpressure scheme **see col 4 L16-50**).

Fan fails to disclose the use of “selective” backpressure, however, one skilled in the art can appreciate the interchangeable concepts of “global” and “selective” backpressure schemes that either allows a node to control an entire multiple-connection link or to control a single best effort connection as in the latter case (see US Pat. 5,629,928 issued to Calvignac et al., **see cols**

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1-2). Thus, it would have been obvious to one of ordinary skill in the art to implement “global” backpressure or “selective” backpressure to provide a desired traffic flow scheme and further control congestion within a given node or nodes to therefore control traffic based on perhaps Guaranteed or Best Effort traffic as may be desired.

Regarding claims 12 and 14, Chen discloses the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as appropriate, (see abstract and col 2 line 47- col 3 line 25).

Chen describes a method for packet loss measurement in high-speed switches by identifying traffic flows in the ingress side of switches, and measuring packets losses for the identified flows on the egress side of the switches. On the egress side, the packet flow is monitored and the packets are counted using the block size as a counting modulo. The value of this counter at the receipt of a marked packets is used to update the number of packets that do not make their way across the switch, see fig 1 and abstract. The traffic flow in Chen can be defined in different ways, and at various degrees of granularity, depending on the user desires, or requirements, (see col 2 L47-col 4 L40). The packet flow scheme of Chen provides an ongoing update of how many packets have been lost within a switch or node and further to prevent overflow of same switch/node and thus reducing further packet loss and increasing link efficiency.

Response to Arguments

Applicant's arguments with respect to claims 1-4 and 6-16 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raj Jain whose telephone number is 703-305-5652. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4336. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

RJ
August 14, 2004


WELLINGTON CHIN
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